

Application No. 10/532,454

REMARKS

Claims 11-23 are pending. By this Amendment, no claims are cancelled, claims 11, 12, 20 and 22 are amended and no new claims are added.

35 U.S.C. § 102

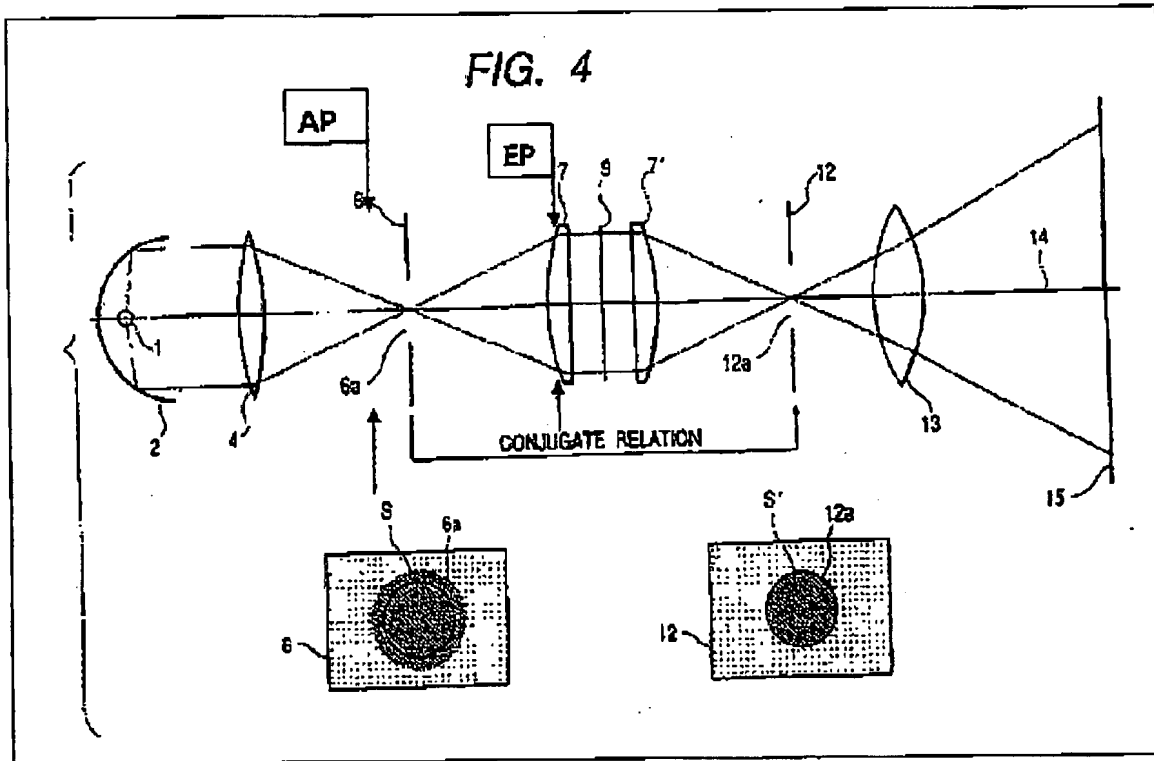
The Examiner rejected claims 11, 13, 19-21 and 23 under 35 U.S.C. § 102(e) as being anticipated by Koyama et al. (6,607,280).

By this Amendment, Applicant has amended claim 11 to recite "a deflection device which deflects the light bundle across the projection surface." Claim 11 has also been amended to recite the element "two stage transformation optics for angular magnification of said light bundle." Finally, claim 11 has been amended to recite "wherein an entrance pupil of the transformation optics is located in front of a first lens vertex of the transformation optics". These limitations are not disclosed or suggested by the Koyama et al., reference.

Koyama does not disclose or suggest a deflection device deflecting light bundle across the projection surface as now recited in claim 11. Further, in an arrangement for projection using a writing light bundle there is usually a transformation optics for angular magnification of deflected light bundle as for example, described on page 2, lines 11-27 of the application as originally filed. However, in a projecting system as disclosed in Koyama et al., in which a primary image is imaged on the projection surface, a transformation optics for an angular magnification of a deflected light bundle is not present, therefore, Koyama et al., does not disclose or suggest a two stage transformation optics for an angular magnification of the deflected light bundle as now recited in claim 11.

Figure 4 of Koyama et al., has been reproduced below with the positions of the entrance pupil (EP) and the exit pupil (AP) marked.

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The Office Action considered the optical systems consisting of elements 7, 9, 7' to be the transformation optics. As can be seen, the entrance pupil lies in lens 7 and is therefore not located *in front of the first lens vertex* of the optical system. Further, the exit pupil (EP) is located in front of the stop 6, and is therefore not located between the lens vertex of the last lens and the projection surface as recited in claim 11.

Stop 6 in Figure 4 of Koyama et al., is the object plane of the optical system 7, 9, 7', and stop 12 is the image plane of optical system 7, 9, 7'. Therefore, even if the optical system depicted is considered to be two stage transformation optics for angular magnification (which is not correct) the positions of the entrance pupil and the exit pupil in this optical system are not as recited in claim 11 as amended.

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Therefore, claim 11 is now allowable over the Koyama et al., reference at least because Koyama does not disclose or suggest any of the following 1) a deflection device deflecting the light bundle across the projection surface; 2) two stage transformation optics for angular magnification of the deflected light bundle; and 3) two stage transformation optics having an entrance pupil located in front of a first lens vertex of the transformation optics and an exit pupil located between the lens vertex of the last lens of the transformation optics and the projection surface. Applicants respectfully request that the Examiner withdraw the rejection.

The Office Action also rejected independent claim 20. Claim 20 has been amended to recite "wherein the ratio of the refractive powers of the partial systems determines the angular magnification of said incident light bundle." Claim 20 also recites wherein "an arrangement of lens in the second partial system is selected such that, as seen in the direction of light propagation, an exit pupil of the transformation optics is located between a lens vertex of the last lens of the second partial system and the projection surface, and wherein the stop is arranged at the exit pupil.

Koyama et al., does not disclose or suggest an optical system for transforming the angle of an incident light bundle and Koyama does not disclose or suggest the two stage transformation optics for angular magnification of the light bundle. In particular, as disclosed by Koyama et al., the exit pupil is not arranged between the vertex of the last lens of the second partial system on the two stage transformation optics, and the projection surface and Koyama et al., does not disclose a stop at the exit pupil. Therefore, claim 20 as amended should be patentable over Koyama et al. Applicants respectfully request that the Examiner withdraw the rejection.

The Office Action includes no detailed rejections or objections to independent claim 22, however, it is indicated as being rejected. Applicant respectfully points out that, as discussed above, Koyama et al., does not disclose a "two stage angle transformation optics having a first exit pupil located within said transformation optics", as now recited in amended claim 22.

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Further, Koyama et al., does not disclose an optical system "wherein the relay optics comprises an entrance pupil that is equal to said first exit pupil and a second exit pupil." As now recited in amended claim 22. Therefore, claim 22 should be patentable over Koyama et al. Applicants respectfully request that the Examiner withdraw the rejection.


Allowable Subject Matter

Applicant thanks the Examiner for the indication that claims 12 and 14-18 would be allowable if rewritten in independent form. However, as indicated above, claims 11, 20 and 22 have been amended to make them patentable over the prior art of record in the application. Therefore, the dependent claims which depend from claims 11, 20 and 22 are all patentable for at least the same reasons as indicated for their respective independent claims. Applicants respectfully request that the Examiner withdraw the rejections.

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



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